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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,598	07/27/2001	Ernie Thomas	E-2041	2104

7590 12/19/2003
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EXAMINER

HALPERN, MARK

ART UNIT PAPER NUMBER

1731

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,598

Applicant(s)

THOMAS ET AL.

Examiner

Mark Halpern

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,14,17,24 and 25 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-22 is/are allowed.
- 6) ☒ Claim(s) 1-3,6,12,13,15,16,18,23 is/are rejected.
- 7) ☒ Claim(s) 7-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 114/02
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1) Applicant's election without traverse of invention I and species of shown in Figure 1, drawn on claims 1-3, 6-23, in Paper received 10/16/2003, is acknowledged.

Claims 4-5, 24-25, are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claims 14, 17, are withdrawn by the examiner since the claims depend from nonelected claim 4.

Claims 1-3, 6-13, 15-16, 18-23, are under consideration.

Claim Objections

2) Claims 7-9, 22, are objected to because of the following informalities: Claim 7, line 2, and Claim 22, line 5, recite "a body". The claims should indicate that the body is a part of a nozzle.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3) Claims 1-3, 6, 12-13, 15-16, 18, 23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedel (5,951,734) in view of Ritz (5,147,439).

Claims 1, 6, 23: Friedel discloses a semi-convective forced air system 10 for heating low "E" coated glass sheets. The system includes a furnace with an internal heating chamber 14. The furnace includes electric resistance heating elements 16 on the top and bottom which provide radiant heat to a work piece located therein. A longitudinal conveyor 18 extends lengthwise through the heating chamber 14. The heating chamber and the conveyor have a length and a width (details disclosed in US 4,390,359, incorporated by reference). The system 10 includes a plurality of longitudinally extending air manifolds 20 which are arranged in fluid connection with a compressed air source 22 located external to the heating chamber. The air manifolds 20 are arranged parallel to the length of the longitudinal conveyor 18 and create a downward flow of heated air toward the conveyor 18 to convectively heat a sheet S of glass supported on the conveyor. The convection heat provided by the air manifolds 20 supplements the radiant heat provided by the electric resistance elements 16. The air manifolds of Friedel comprise elongate tubes 26 which are capped at the ends. Each elongated tube 26 has a longitudinal series of apertures 30, of diameter of about 0.04 inches and spaced about 8 ½ inches from each other along the entire length of the elongate tubes 26. Compressed air is discharged from the apertures onto the sheet S (Friedel, col. 4, lines 1-67, and Figures 1-4). Friedel fails to disclose a plurality of nozzle means mounted on each air manifold and spaced along the length of the manifold. Ritz like Friedel discloses a pressure gas jet system in the treatment of

heated glass sheets placed on a conveyor in a furnace (Ritz, col. 3, line 44 to col. 5, line 55, and Figures 1-5). As shown in Figure 4 of Ritz, manifolds 104, 106, 108, 110 provide gas under pressure to a plurality of nozzles 24, mounted on said manifolds and discharging gas in the direction of glass 22. It would have been obvious, to one skilled in the art at the time the invention was made, to combine the teachings of Friedel and Ritz, and mount the nozzles of Ritz into the apertures of Friedel, because such a combination would provide gas/air flow of variable pressure thus improved control of forced air flow in the design of Friedel as disclosed by Ritz (col. 2, lines 24- 57).

Claims 2-3, 18: Figures 5a and 5b of Friedel disclose a bank of air manifolds in the chamber widthwise-extending direction. The air manifolds are shown side-by-side in a horizontal plane above the surface of the glass sheet and above the conveyor (Friedel, col. 5, lines 56-67).

Claims 12-13, 15-16: a distribution system in fluid connection with compressed air source and each manifold is disclosed by Friedel, under claim 1. Valves system, controller of compressed air system, programmable logic computer, filter dryer 40, air regulator 42, solenoid valves 36, 44, arranged in fluid connection with air source 22 and distribution manifold 34 are disclosed by Friedel (col. 4, lines 40-58, col. 5, lines 14-40, and Figures 1, 7).

Allowable Subject Matter

- 4) Claims 19-22, are allowed.

5) Claims 7-11, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for indicating allowable subject matter is that the cited prior art does not show:

a semi-convective forced air system for heating glass sheets during a heating cycle, said system comprising a body having a conduit means for drawing in oven air (claim 7) or a nozzle means for drawing in oven air (claims 10, 11);

a semi-convective oven nozzle for mixing and directing a combination of compressed air and oven air to convectively heat a sheet of glass on a conveyor, said nozzle having a conduit for drawing in oven air (claim 19);

a semi-convective oven air injector for mixing and injecting an external source of compressed air and oven air to convectively heat a sheet of glass on a conveyor, having a body having an air inlet port (claim 22).

Conclusion

6) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Halpern whose telephone number is 703-305-4522. The examiner can normally be reached on Mon-Fri, (9:00-5:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703-308-1164. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

A handwritten signature in black ink, appearing to read "M. Halpern", with a stylized, flowing script.

Mark Halpern
Patent Examiner
Art Unit 1731